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## Weekly Water and Climate Update

Thursday, January 22, 2015

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### NRCS Snow Survey and Water Supply Forecasting [Photo Contest](#)

#### 2nd Place - Scenery

Bradley Lake and Nuka Glacier, Taken from  
the Lower Kachemak SNOTEL Site, Alaska

Photographer: Daniel Fisher, NRCS

**U.S. Weather Outlook:** “For the remainder of today, precipitation (rain and snow) will gradually end across *southern sections of the Rockies and Plains*. However, rain will spread across the *South*, where storm-total precipitation (through Saturday) could reach 1 to 3 inches from *eastern Texas to the coastal Carolinas*. In the *eastern U.S.*, accumulating snow—along with some freezing rain—may occur during the weekend from portions of the *Mid-Atlantic States into coastal New England*. In contrast, little or no precipitation will occur during the next 5 days from *Oregon and California eastward to the northern and*

*central Plains*. The NWS 6- to 10-day outlook for January 27-31 calls for the likelihood of above-normal temperatures from the *Pacific Coast to the Plains*, while colder-than-normal conditions will dominate areas *east of the Mississippi River*. Meanwhile, near- to below-normal precipitation across the majority of the U.S. will contrast with wetter-than-normal weather across the *northern High Plains*, along the *middle and northern Atlantic Coast*, and from *southern California to the southern High Plains*.”

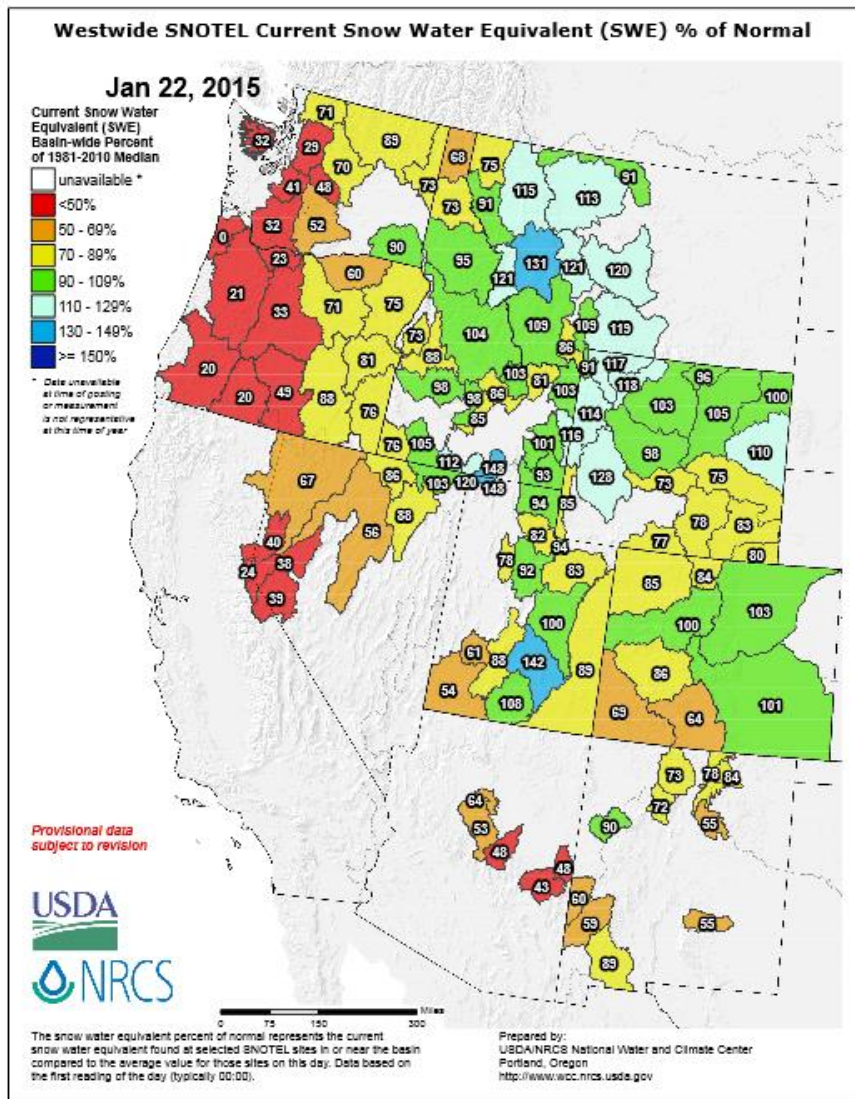
**Contact:** Brad Rippey, Agricultural Meteorologist, USDA/OCE/WAOB, Washington, D.C. (202-720-2397)

**Website:** <http://www.usda.gov/oce/weather/pubs/Daily/TODAYSWX.pdf>

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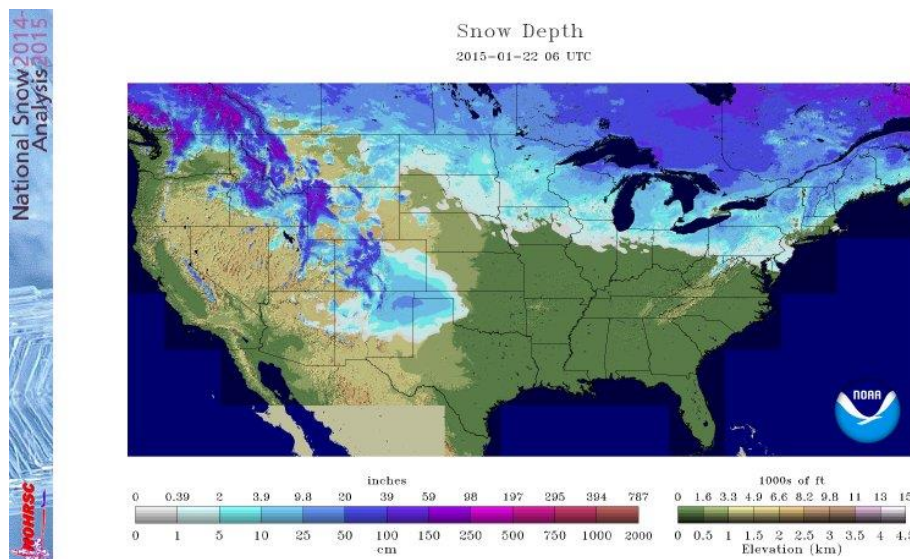
The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment

## Snow



The [Westwide SNOTEL Current Snow Water Equivalent \(SWE\) percent of Normal map](#), shows the largest snowpack deficits (red areas) are in the Cascades and Olympics of Oregon and Washington, and the Sierra Nevada in Nevada, California, as well as basins in Arizona. Parts of eastern Washington and Oregon, northern Idaho, southwestern Utah, much of Arizona and New Mexico, and a few basins in other states have less than normal snowpacks as well at this time (orange and yellow areas).

Basins in Wyoming, Montana, Idaho, Colorado, and Utah have recorded above normal SWE values (blue areas).



Snow depth map of the U.S. as reported from [NWS NOHRSC](#) for January 22, 2015. Snow is reported across much of the mountains in the West, the upper Midwest, much of the northern Plains, and the Northeast. Areas with a substantial snowpack include the Upper Peninsula of Michigan, and the Rocky Mountains in Colorado, Wyoming, Montana, and central Idaho. The north Cascades in Washington also has substantial snow.



## Weekly Water and Climate Update

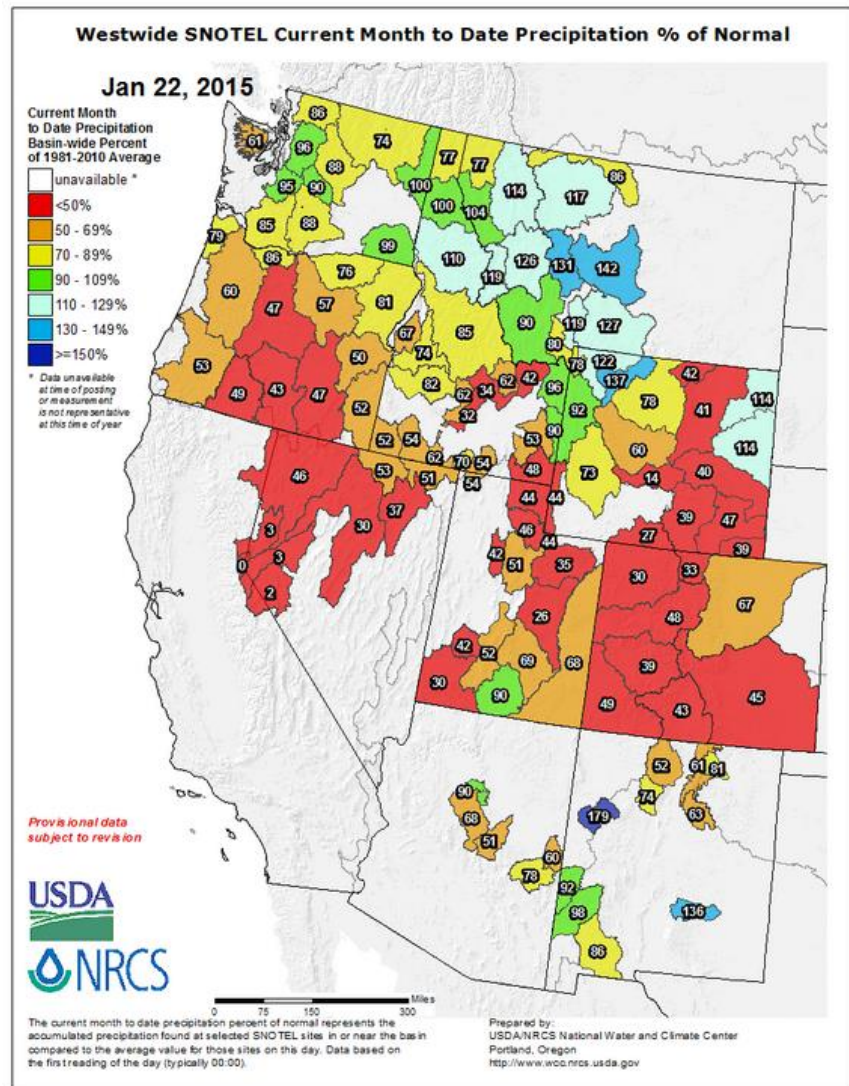
### Precipitation

In the West, the [SNOTEL](#) precipitation percent of normal map shows substantial precipitation in basins in Montana, Wyoming, and New Mexico, so far in January (blue areas).

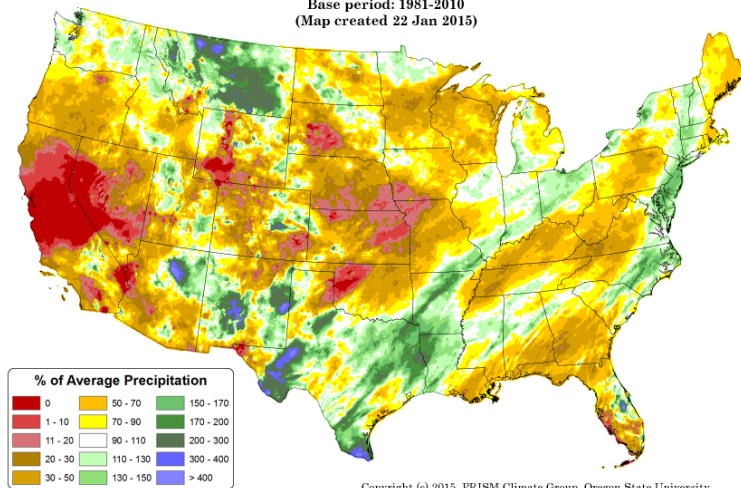
Much below normal precipitation occurred across most of Oregon, California, Nevada, southern Idaho, Utah, parts of Wyoming, Colorado, most of Arizona, and northern New Mexico. Some basins in Washington and one in northern Montana also have less than normal precipitation at this time.

The percent of normal values (especially the dark blue areas) may be amplified where normally very little precipitation falls during this time of year.

*Click on most maps in this report to enlarge and see the latest available update.*



Total Precipitation Anomaly: 01 January 2015 - 21 January 2015  
Period ending 7 AM EST 21 Jan 2015  
Base period: 1981-2010  
(Map created 22 Jan 2015)



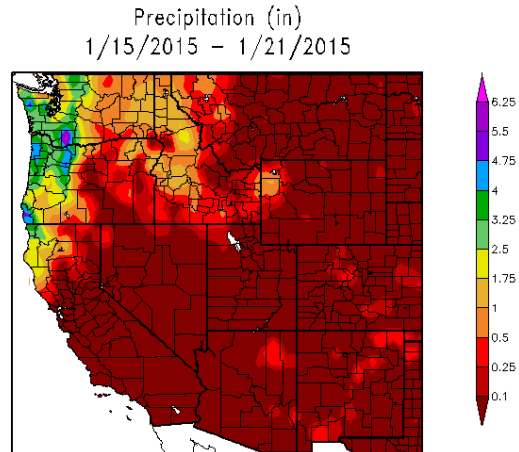
Thus far in January 2015, the national total [precipitation anomaly](#) pattern reveals some higher than normal precipitation, primarily in central Montana, central Arizona, central and eastern New Mexico, and parts of Texas, Louisiana, and Arkansas. A few isolated areas of Colorado, Florida, Delaware, New Jersey, and Maryland also received above normal precipitation. There was little or no precipitation in California, Oregon, Washington, southern Idaho, southwest Wyoming, Nevada, Oklahoma, Kansas, and central South Dakota (red areas).

*This preliminary daily PRISM precipitation anomaly map contains all available network data, including SNOTEL data, and is updated periodically as additional data become available and are quality controlled.*

## Weekly Water and Climate Update

The [ACIS 7-day](#) total precipitation map for the western U.S. shows precipitation concentrated in western Oregon and Washington. The highest areas of significant precipitation were in the central Cascades of southern Washington, with over 6.25 inches.

Little to no precipitation fell across most of the West this week (dark red). This includes most of California, Nevada, southeastern Oregon, most of Montana, Idaho, Wyoming, Colorado, Utah, Arizona, and New Mexico.

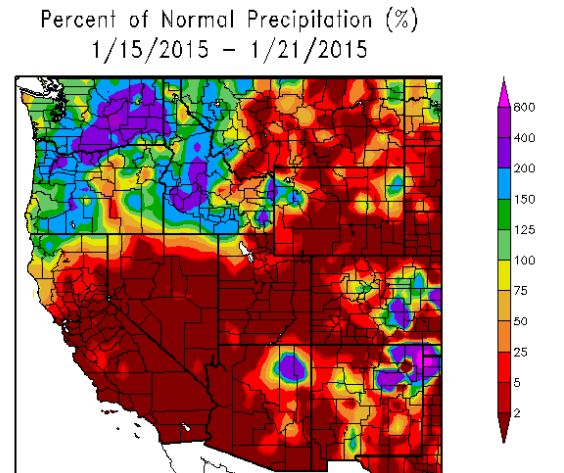


Generated 1/22/2015 at HPRCC using provisional data.

Regional Climate Centers

This percent of normal [map](#) of the West for the last seven days reflects heavy precipitation scattered across the northwest and southeast parts of the region. The heaviest percent of normal precipitation fell in northeast New Mexico (over 600%). Other significant rainfall was in Colorado, northeast Arizona, Oregon, Idaho, and Washington (purple areas). A large contiguous area of little to no precipitation occurred in California, Nevada, Utah, Wyoming, and into parts of Arizona, western Colorado, and central Montana (red areas).

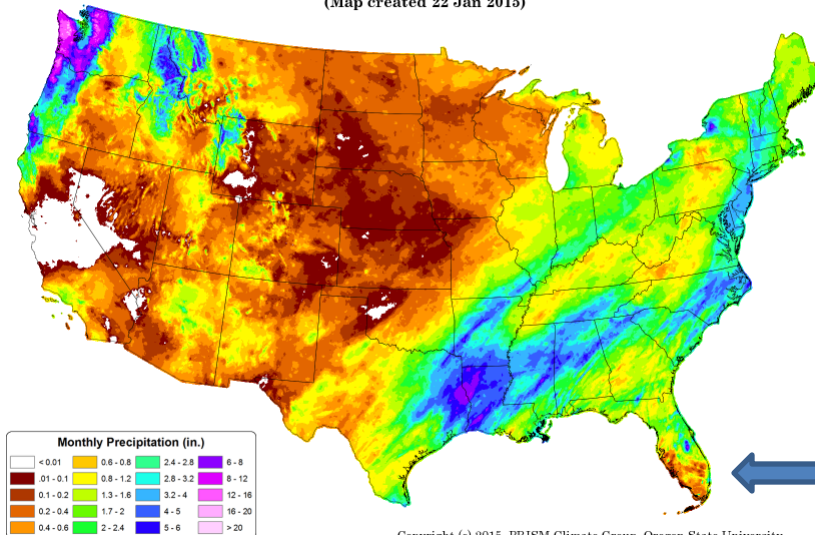
Percent of normal precipitation may be exaggerated in areas where the average for this period is at or near zero.



Generated 1/22/2015 at HPRCC using provisional data.

Regional Climate Centers

Total Precipitation: 01 January 2015 - 21 January 2015  
Period ending 7 AM EST 21 Jan 2015  
(Map created 22 Jan 2015)



Copyright (c) 2015, PRISM Climate Group, Oregon State University

So far in January 2015, the [total precipitation](#) across the continental U.S. was heaviest in western Washington and Oregon with over 16 inches recorded in the Cascade and Olympic Mountains. Eastern Texas and Louisiana also had an area of precipitation above 6 inches so far this month. In contrast, much of California, Nevada, and parts of Wyoming, South Dakota, Nebraska, Kansas, Oklahoma, and southern Florida were mainly dry.

See [Go Hydrology](#) for current and forecast conditions over southern Florida.

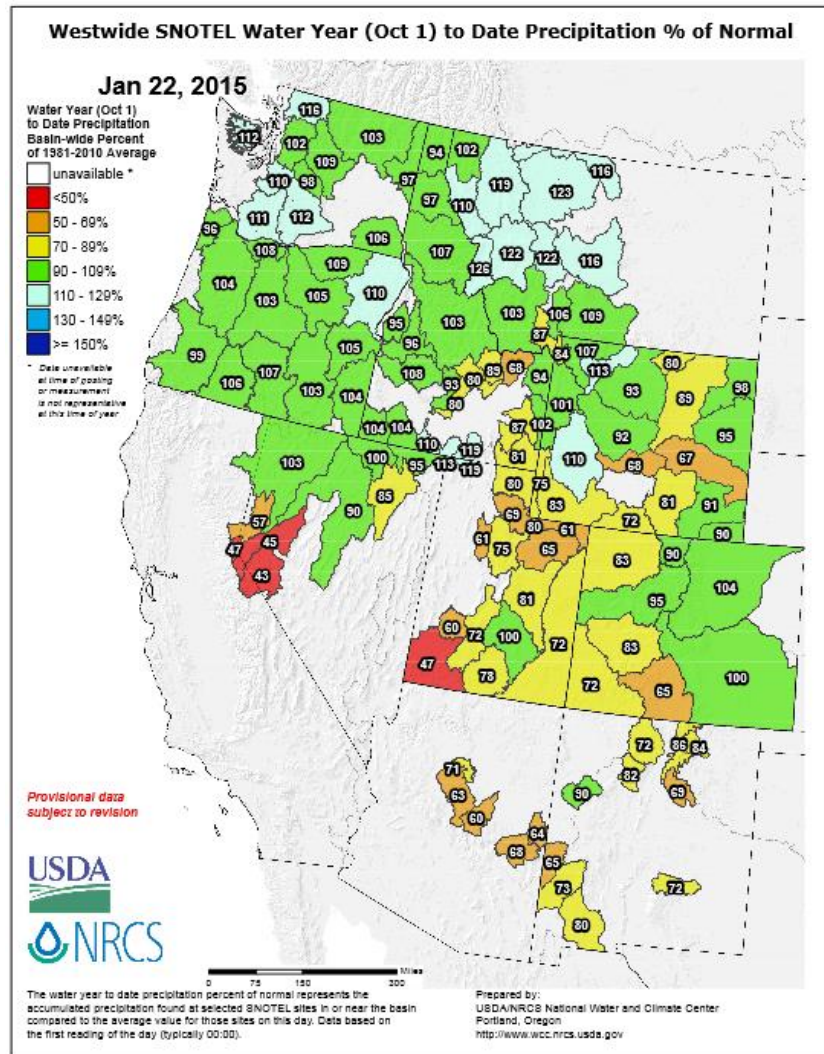


## Weekly Water and Climate Update

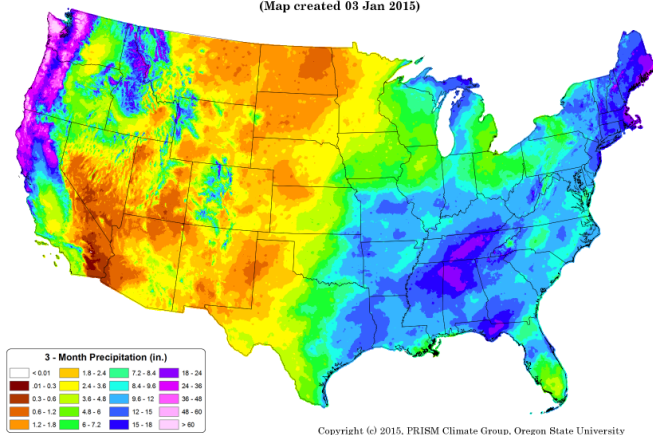
For the [2015 Water Year](#) that began on October 1, 2014, the highest precipitation surpluses are reported in a few basins in western Washington, southern Idaho, Montana, two basins in western Wyoming, and one basin in northeast Oregon. Above normal precipitation ranged from 110 to 126% of average.

Many basins across the West have near normal conditions for this part of the Water Year (mapped in green). A few areas have less than normal precipitation for the Water Year. These include basins in eastern Idaho, parts of Wyoming, most of Utah, western Colorado, Arizona, and New Mexico (mapped in yellow and orange). Nevada and California contain basins with much below normal precipitation in the central Sierra Nevada, as does southeast Utah.

At the beginning of the Water Year, basin conditions can change rapidly with small amounts of precipitation. As the Water Year advances, it becomes more difficult for river basins to change bin categories.



Total Precipitation: October 2014 - December 2014  
Period ending 7 AM EST 31 Dec 2014  
(Map created 03 Jan 2015)



The national map of the [three-month period](#) (October - December) shows that the eastern half of the nation received precipitation in the range from 6 inches to greater than 48 inches. Parts of the West also received significant precipitation, but these areas were generally more isolated than in the eastern U.S. The highest amounts over 48 inches were recorded in California, Oregon, and Washington. Colorado, Wyoming, Idaho, Montana, New Hampshire, Maine, Massachusetts, Tennessee, Alabama, Mississippi, and Florida all received precipitation over 18 inches in some areas.

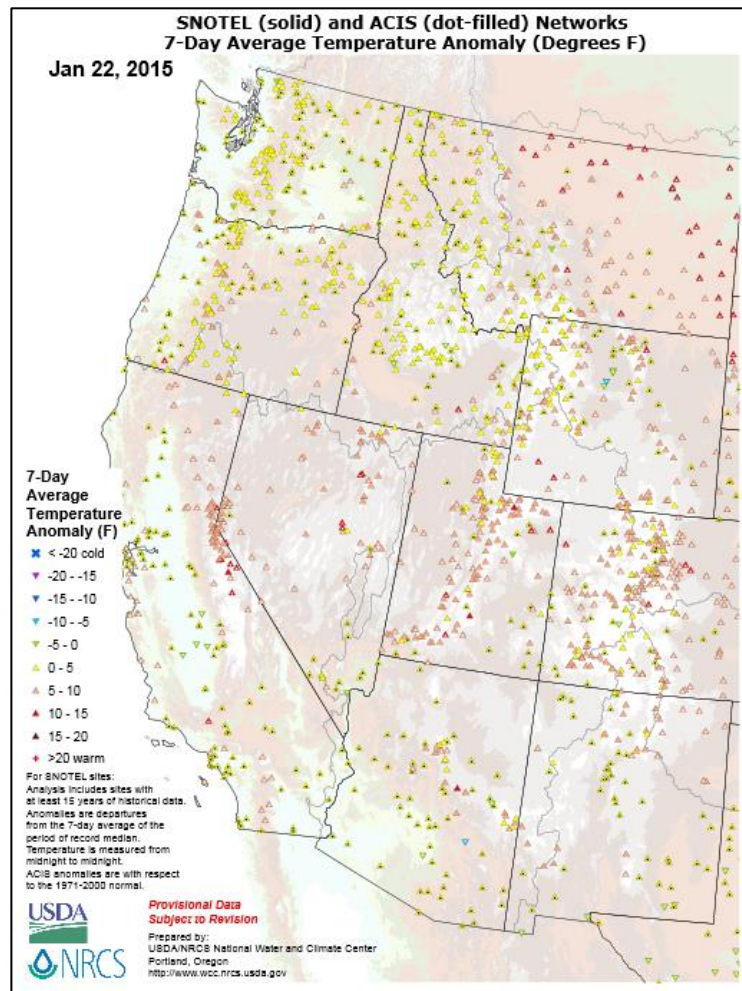
In contrast to the eastern U.S., parts of the West received totals of less than 1.8 inches. Southern California, southern Nevada, and parts of Arizona and Utah had little to no precipitation for the period.

## Weekly Water and Climate Update

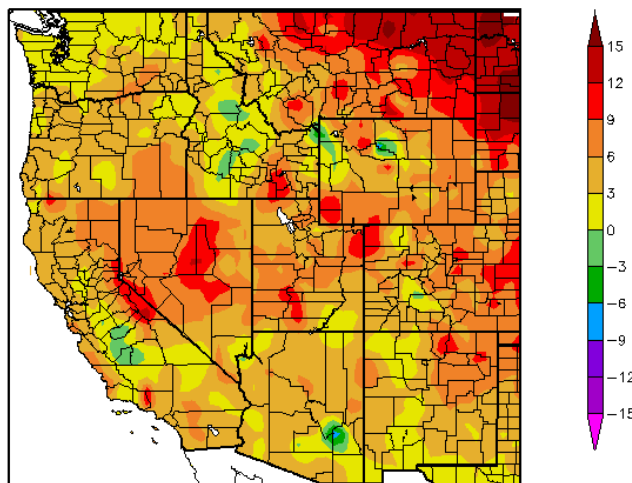
### Temperature

The SNOTEL and ACIS [7-day temperature anomaly](#) map for the western U.S. shows most of the West was near normal to above normal for the week. The warmest recorded temperature anomalies were scattered in the central Colorado Rockies, across most of Utah, central Arizona, eastern Montana and Wyoming, most of Nevada, and the Sierra Nevada in California. Other scattered warmer than normal temperatures occurred in the Cascade regions of Oregon and Washington, as well as some scattered higher temperatures in eastern Oregon and Washington, and southern Idaho. These anomalies across the West ranged from 5- to 15-degrees warmer than normal.

The coolest anomalies in the West were a single station in central Wyoming and one in southeast Arizona where temperature departures were in the -5 to -10°F range. A few other widely scattered stations were also very slightly cooler than normal.



Departure from Normal Temperature (F)  
1/15/2015 – 1/21/2015



The [ACIS](#) map of the 7-day average temperature anomalies in the West ending January 21, shows that the greatest positive temperature departures occurred in northeast Montana (>+15°F). Other warm temperatures occurred in most of the West, including California, Nevada, southern Idaho, Utah, Oregon, Arizona, northwest New Mexico, Colorado, Wyoming, and parts of Oregon and Washington. There were slightly negative temperature departures concentrated in southeast Arizona and north central Wyoming. (<-6°F).

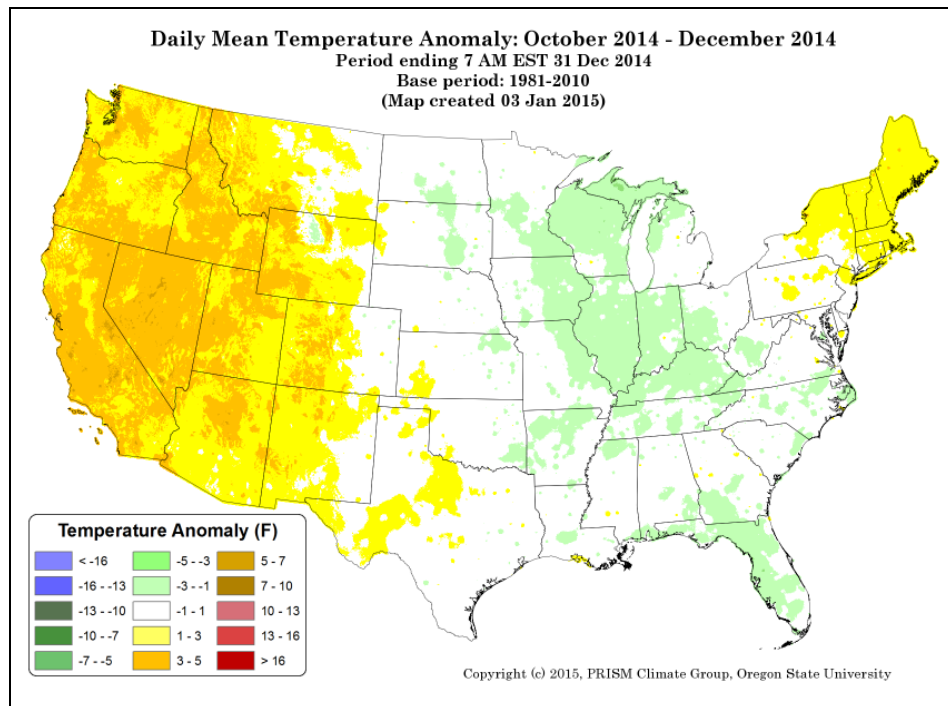
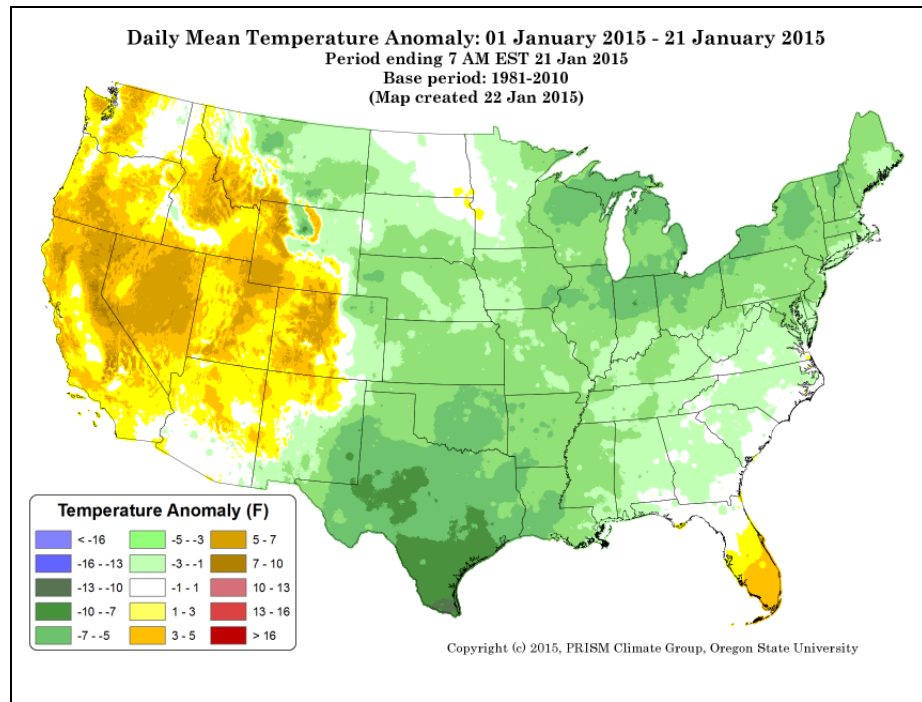
Also, see [Dashboard](#) and the [Westwide Drought Tracker](#)



## Weekly Water and Climate Update

This preliminary [PRISM](#) temperature map contains all available network data, including SNOTEL data, and will be updated periodically as additional data become available and are quality controlled.

Thus far in January 2015, the national daily mean temperature anomaly [map](#) shows a large cool region over most of the eastern half of the country, with the coldest anomaly in southern Texas ( $<-10^{\circ}\text{F}$ ). Cold Canadian airflow caused much of the central U.S. to be cooler than average thus far in January. Above normal temperatures were recorded in the West and in southern Florida. ( $>+5^{\circ}\text{F}$ ).



The October - December national daily mean temperature anomalies for the U.S. in this [climate map](#) show the western U.S. had slightly to above normal temperatures ( $>+7^{\circ}\text{F}$ ). The central portion of the country reported normal to slightly cooler than normal temperatures for this period, with the coolest temperatures in a small area of northern Michigan ( $<-3^{\circ}\text{F}$ ).

# Weekly Water and Climate Update

## Weather and Drought Summary

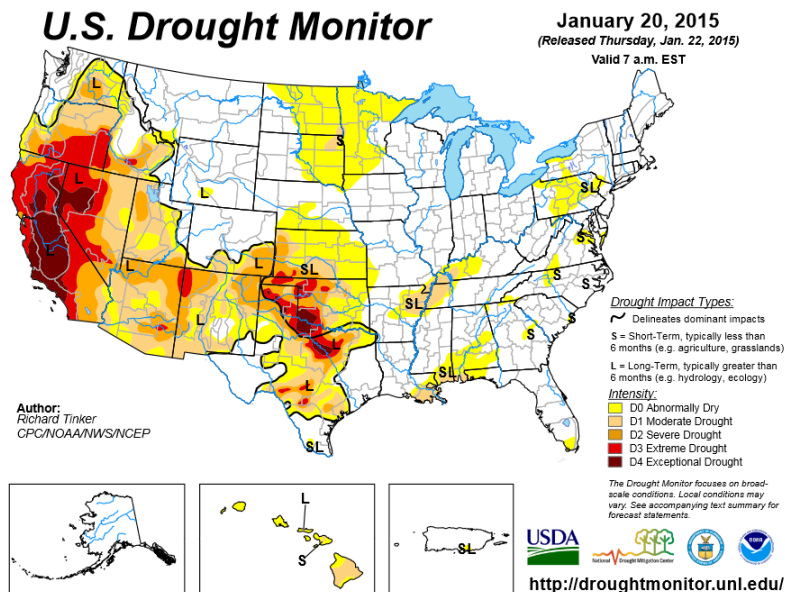
### National Drought Summary – January 20, 2015

The following **Weather and Drought Summary** is provided by this week's NDMC Drought Author, Richard Tinker, NOAA/NWS/NCEP/CPC.

USDM Map Services: contains [archived maps](#)

"For the contiguous 48 states, the U.S. Drought Monitor showed 28.18 percent of the area in moderate drought or worse, compared with 27.97 percent a week earlier. Drought now affects 67,285,200 people, compared with 65,976,460 a week earlier.

For all 50 U.S. states and Puerto Rico, the U.S. Drought Monitor showed 23.63 percent of the area in moderate drought or worse, compared with 23.37 percent a week earlier. Drought now affects 67,438,874 people, compared with 66,000,013 a week earlier."



See: Latest Drought [Impacts](#) during the past week.

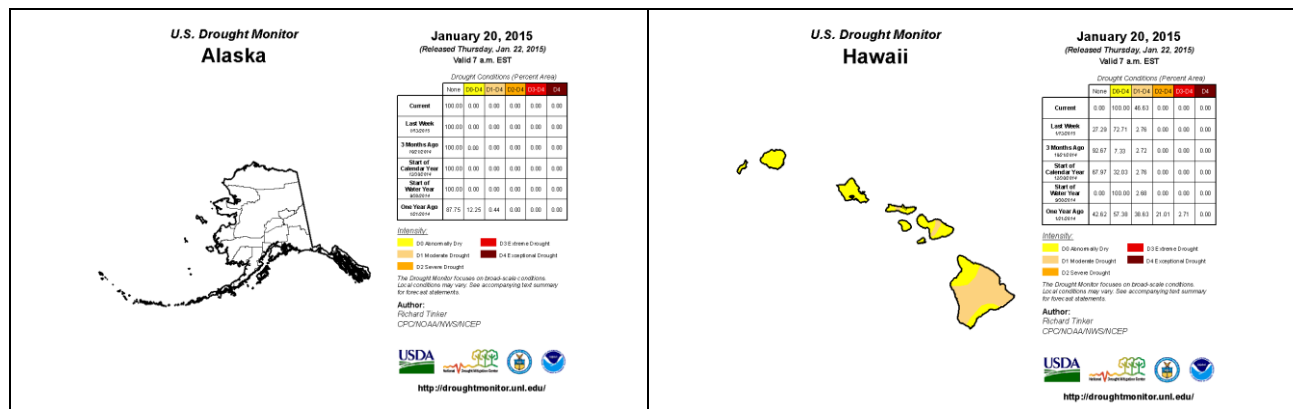
[Current Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are scattered across CA, NV, TX, and OK.

The latest [drought indicator blend and component percentiles](#) spreadsheet is a great resource for climate division drought statistics. This link is for the latest [Drought Outlook](#) (forecast). See [climatological rankings](#).

For more drought news, see [Drought Impact Reporter](#).  
New: [ENSO Blog](#).

#### Drought Management Resources:

- ✓ <http://www.usda.gov/oce/weath/Drought/AgInDrought.pdf>
- ✓ [Watch AgDay TV](#)
- ✓ [Drought Impacts Webinar Series](#)
- ✓ [NIDIS Quarterly Climate Impacts and Outlook](#)
- ✓ [The Spring 2014 edition of DroughtScape](#)
- ✓ [U.S.Crops in Drought](#)



"The [49th](#) and [50th](#) States show normal to moderate drought conditions. No changes were noted for Alaska or Hawaii this week. A comprehensive narrative describing drought conditions across other parts of the nation can be found toward the end of this document. For drought impacts definitions for the figures that follow, click [here](#)."



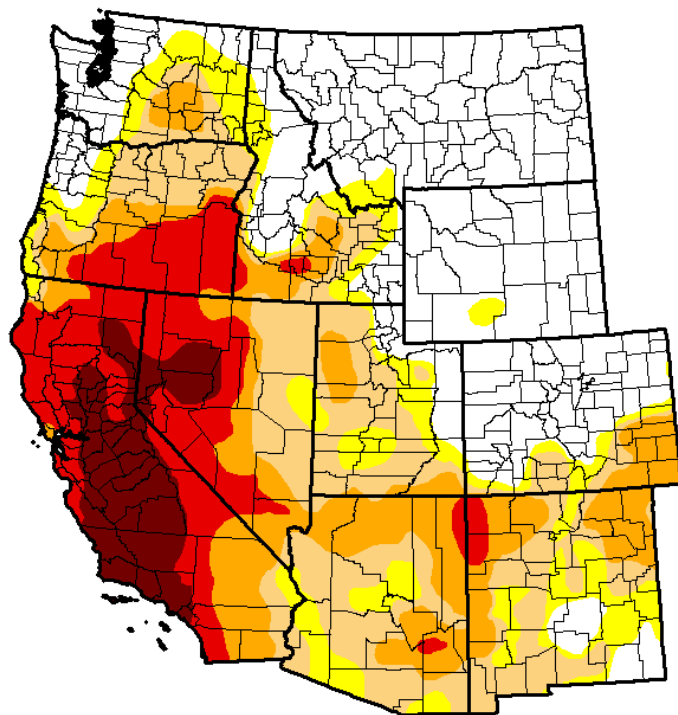
## Weekly Water and Climate Update

### U.S. Drought Monitor West

**January 20, 2015**

(Released Thursday, Jan. 22, 2015)

Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	35.52	64.48	53.09	33.62	18.52	6.35
<b>Last Week</b> 1/13/2015	34.29	65.71	53.21	33.18	18.52	6.35
<b>3 Months Ago</b> 10/21/2014	31.95	68.05	55.56	34.82	19.08	8.90
<b>Start of Calendar Year</b> 12/30/2014	34.76	65.24	54.48	33.50	18.68	5.40
<b>Start of Water Year</b> 9/30/2014	31.48	68.52	55.57	35.65	19.95	8.90
<b>One Year Ago</b> 1/21/2014	18.74	81.26	60.81	36.99	13.78	0.63

#### Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

#### Author:

Richard Tinker  
CPC/NOAA/NWS/NCEP



<http://droughtmonitor.unl.edu/>

There was a slight decrease in D0 – D1 drought categories in the West this week. D0 and D2 increased slightly and D3- D4 categories did not change.

[Click to enlarge maps](#)

## Risk Management Web Resources

Drought Monitor for the [Western States](#). Drought Impact Reporter for [New Mexico](#), [California Data Exchange Center](#) & [Flood Management Intermountain West Climate Dashboard](#)  
[California Sierra Nevada-related snow pack](#)

U.S. [Impacts](#) during the past week:

West: [Westwide snow school to teach sampling and survival](#) – Jan 14

## Weekly Water and Climate Update

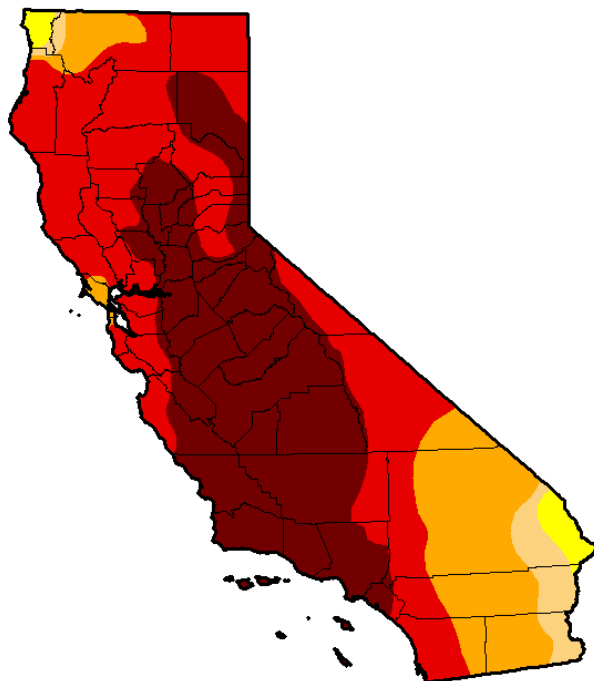
### State with D-4 Exceptional Drought

#### U.S. Drought Monitor California

**January 20, 2015**

(Released Thursday, Jan. 22, 2015)

Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	0.00	100.00	98.13	94.34	77.52	39.15
<b>Last Week</b> 1/13/2015	0.00	100.00	98.12	94.34	77.52	39.15
<b>3 Months Ago</b> 10/21/2014	0.00	100.00	100.00	95.04	81.92	58.41
<b>Start of Calendar Year</b> 12/31/2014	0.00	100.00	98.12	94.34	77.94	32.21
<b>Start of Water Year</b> 9/30/2014	0.00	100.00	100.00	95.04	81.92	58.41
<b>One Year Ago</b> 1/21/2014	1.43	98.57	94.18	89.91	62.71	0.00

#### Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

#### Author:

Richard Tinker  
CPC/NOAA/NWS/NCEP



<http://droughtmonitor.unl.edu/>

There was a very slight increase in D1 in California this past week.

[CA Drought Information Resources](#)

[Drought News from California:](#)

[Farmers in dry California decry decision involving appeals](#) – Jan 12

[Delta fish species plunge amid drought](#) – Jan 14

[California drought: Jerry Brown unveils proposal on how to start spending \\$7.5 billion water bond](#)  
– Jan 11

[Farmers, utilities lose bid to overturn delta smelt protections](#) – Jan 13

[January looking dry, next few months warm](#) – Jan 15

[Drought fears return with signs of 4th straight dry year](#) – Jan 16

[Forecasts show drought continuing in California, Southwest](#) – Jan 15

[Mountain View flushes pipes after residents complain of smelly tap water](#) – Jan 14

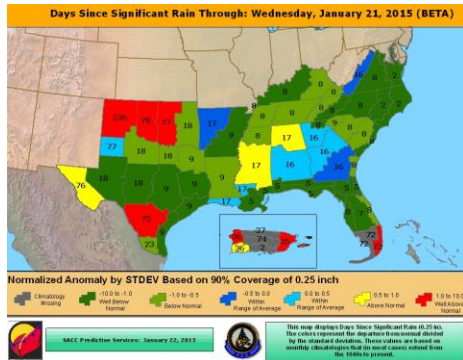


## Weekly Water and Climate Update

Texas Drought [Website](#).  
[Texas Reservoirs](#).  
[Texas Drought Monitor Coordination Conference Call](#): on Monday's 2:00 PM - 3:00 PM CST

Texas Drought News:

[CRMWA remains cautious despite rising lake level](#) – Jan 14

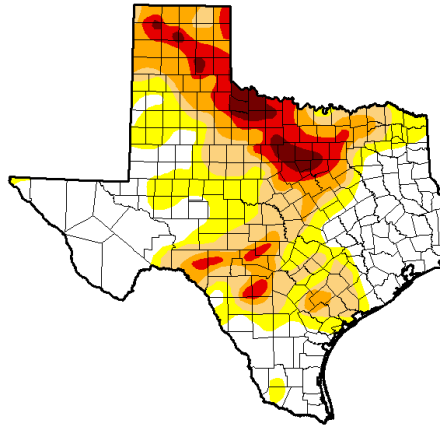


[Days since Significant Rain Summary](#)

### State with D-4 Exceptional Drought

#### U.S. Drought Monitor Texas

January 20, 2015  
 (Released Thursday, Jan. 22, 2015)  
 Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	39.80	60.20	40.64	24.74	11.34	3.05
Last Week 1/13/2015	39.80	60.20	40.34	23.49	11.03	2.90
3 Months Ago 10/21/2014	29.97	70.03	48.56	27.50	11.53	2.88
Start of Calendar Year 12/01/2014	34.37	65.63	44.68	25.73	11.70	3.17
Start of Water Year 8/01/2014	28.92	71.08	48.95	29.54	11.26	2.69
One Year Ago 1/21/2014	23.26	76.74	45.74	21.59	6.88	0.79

Intensity:  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:  
 Richard Tinker  
 CPC/NOAA/NWS/NCEP



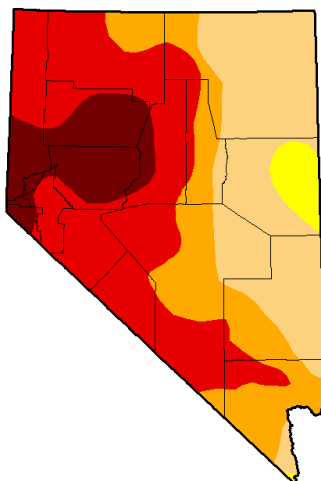
<http://droughtmonitor.unl.edu/>

There was an increase in D1 – D4 in Texas this past week. The D0 and drought-free areas did not change.

### State with D-4 Exceptional Drought

#### U.S. Drought Monitor Nevada

January 20, 2015  
 (Released Thursday, Jan. 22, 2015)  
 Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	96.97	68.25	48.38	12.18
Last Week 1/13/2015	0.00	100.00	96.98	68.25	48.38	12.18
3 Months Ago 10/21/2014	0.00	100.00	97.07	69.89	48.38	11.89
Start of Calendar Year 12/01/2014	0.00	100.00	96.98	68.25	48.38	11.89
Start of Water Year 8/01/2014	0.00	100.00	97.04	69.89	48.38	11.89
One Year Ago 1/21/2014	0.00	100.00	96.80	80.30	38.17	5.37

Intensity:  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:  
 Richard Tinker  
 CPC/NOAA/NWS/NCEP



<http://droughtmonitor.unl.edu/>

There was a very slight decrease in D1 in Nevada this past week.

### Nevada Drought News:

[Recent dry spell means snowpack figures are worsening](#) – Jan 14

## Weekly Water and Climate Update

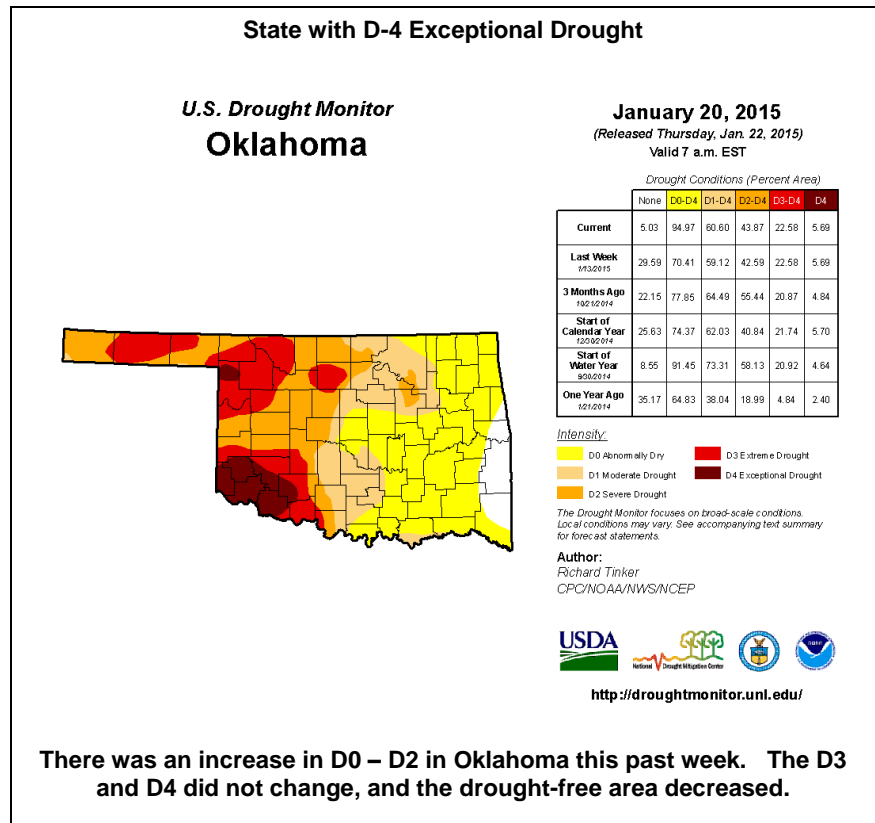
### Related Area News:

[2014 Kansas Drought Report and Summary](#)

- [Past 30 days precipitation totals](#)
- [Past 30 days precipitation percent of normal](#)
- [Calendar Year precipitation totals](#)
- [Calendar Year Precip percent of normal](#)
- [Short Crop ET](#)

### Oklahoma Drought News:

[Drought-Stricken Oklahoma Communities Dealing With Prospect of Dead Lakes](#) – Jan 15



## U.S. Population in Drought

**Number of people in each drought category in the U.S. for the week ending January 13, 2015**

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
2015-01-20	205,299,782	100,097,673	67,285,201	48,999,128	38,106,155	21,023,169
2015-01-13	209,514,510	95,882,945	65,976,461	48,798,912	37,502,373	21,021,588

**Population figures affected by drought in the U.S. Drought Monitor website show that, for this week, more than 67,200,000 people in the United States were in a drought-affected area, which increased by over 1,280,000 people from last week.**

#### Population Statistics Methodology:

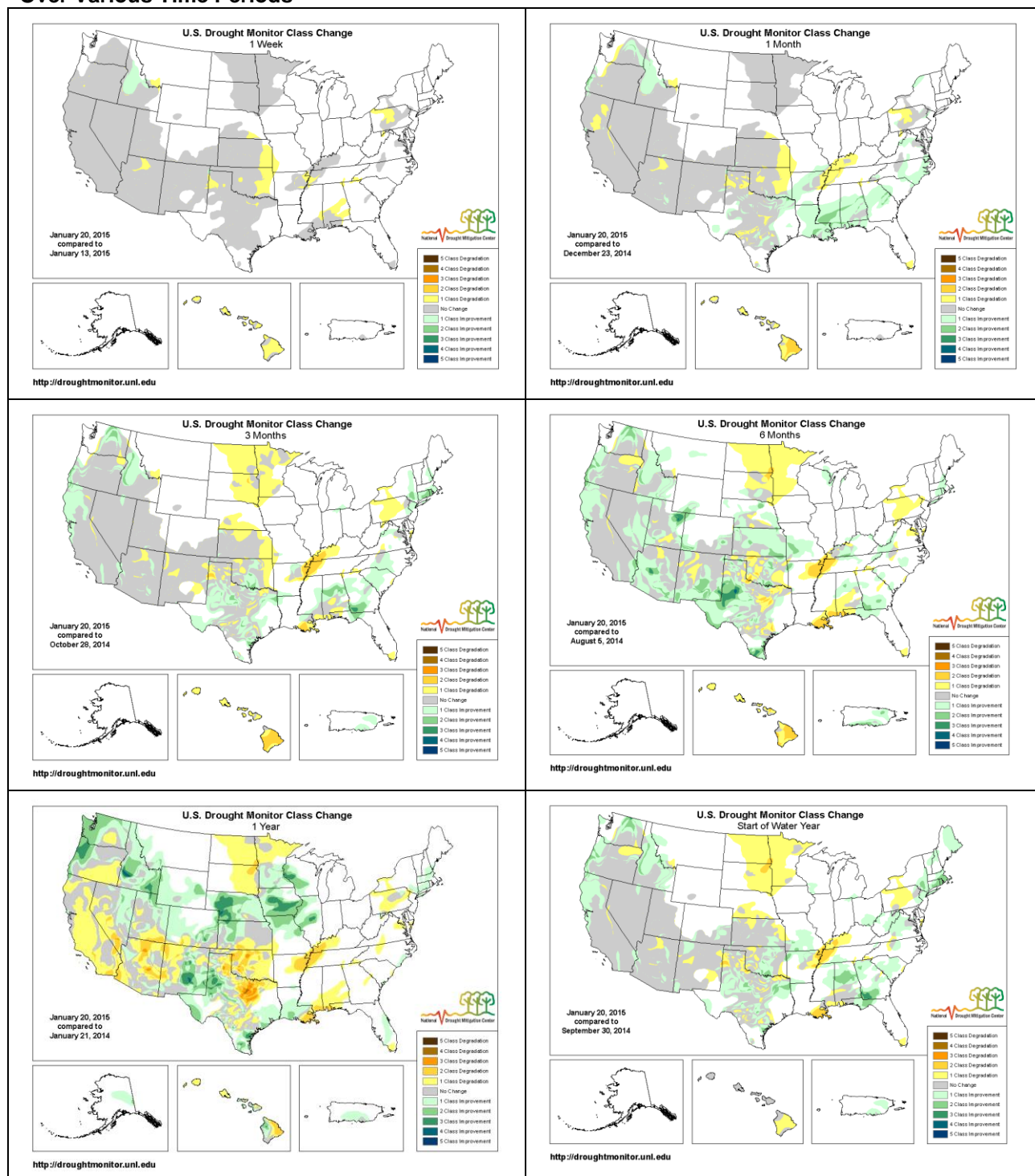
The U.S. Drought Monitor population statistics are calculated at the county level, and aggregated to the state, regional, and national levels. The population densities have been calculated for each county. The proportion of the physical area of the county that is in drought is multiplied by the uniform population density in order to obtain a number for each county. The county values are then summed at the state, regional, and national level.



## Weekly Water and Climate Update

### Changes in Drought Monitor Categories

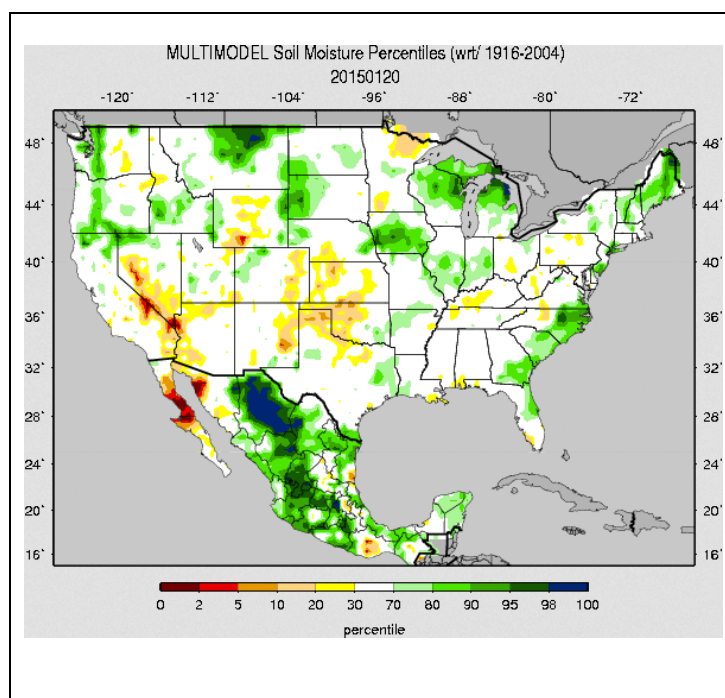
#### Over Various Time Periods



Click on any of these maps to enlarge. Note how the conditions over the Rockies and central Great Plains have improved between 6 to 12 months (middle right to lower left maps). However, also note that since a year ago, conditions over parts of the Northeast, the South, parts of the southern Great Plains and the Pacific coast states have deteriorated significantly (lower left map).

## Weekly Water and Climate Update

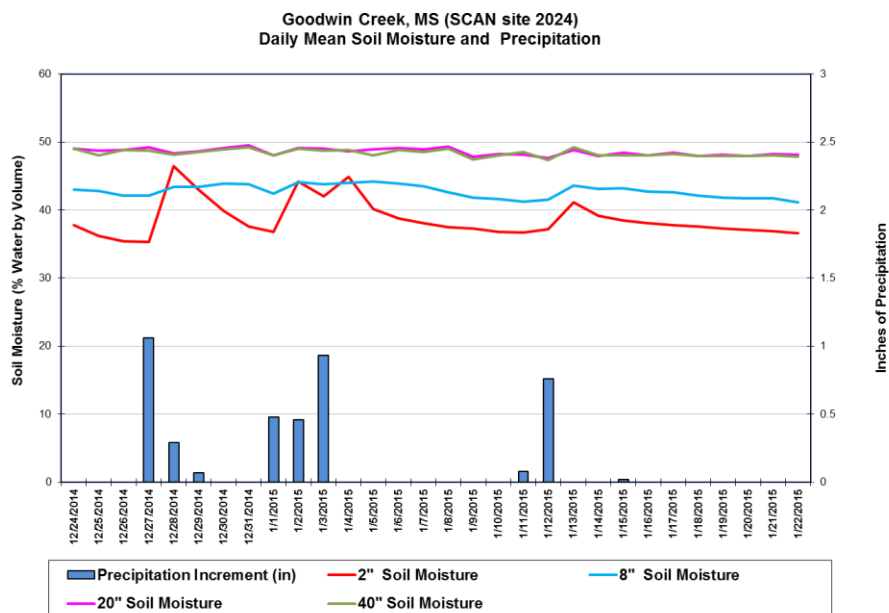
### Soil Moisture



The national soil moisture model ranking in [percentile](#) as of January 20, 2015, shows dryness over most of the south central and southwest U.S. The driest areas are in southern Wyoming, southern Nevada, southern California, eastern New Mexico through central Oklahoma, and northern Minnesota. There were additional dry areas elsewhere. Moist soils dominated north central Montana, western Washington and Oregon, western South Dakota, Iowa, northern Wisconsin, Michigan, Maine, and eastern North Carolina. Slightly moist soils were also scattered elsewhere throughout the country, especially in the Northeast and Southeast.

Useful Hydrological Links: [Crop Moisture Index](#); [Palmer Drought Severity Index](#); [Standardized Precipitation Index](#); [Surface Water Supply Index](#); [Weekly supplemental maps](#); [Minnesota Climate Working Group](#); [Experimental High Resolution Drought Trigger Tool](#); [NLDAS Drought Monitor](#); [Soil Moisture](#)

### Soil Climate Analysis Network (SCAN)



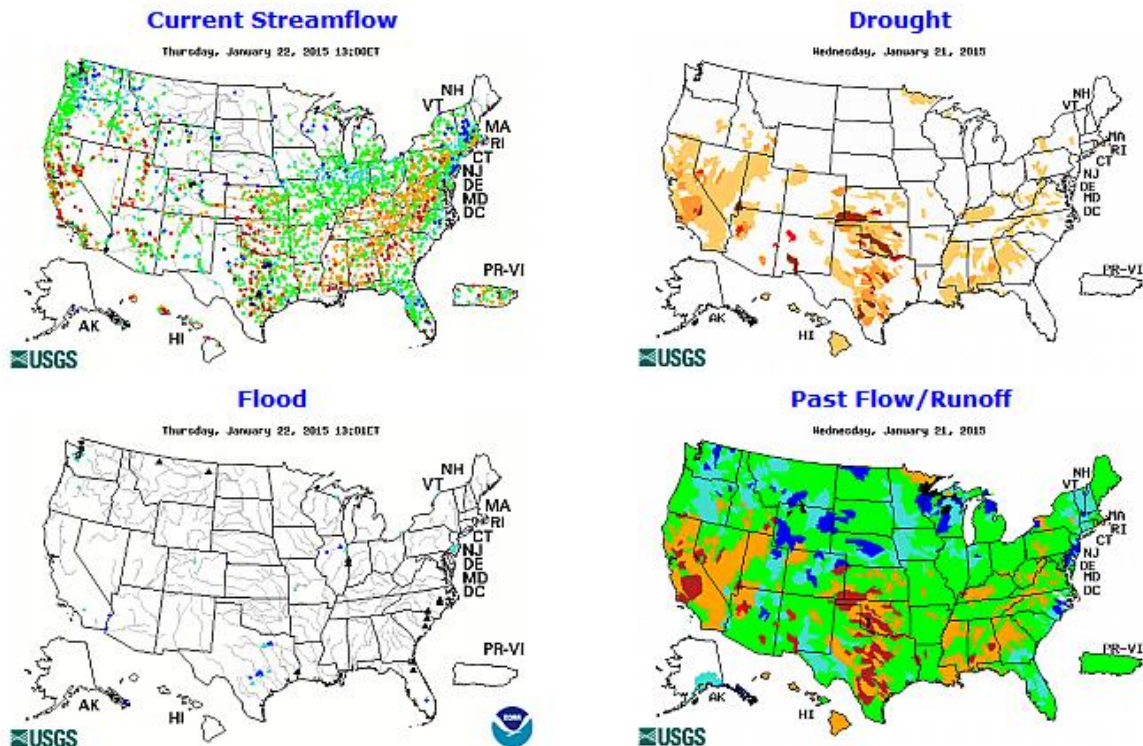
This NRCS resource shows soil moisture data for the last month [Goodwin Creek \(SCAN site #2024\)](#) in Mississippi. The area had precipitation several times this past month (blue bars). This rainfall resulted in an increase in soil moisture, primarily at the 2-, and 4-inch depths. The other depth sensors reported little change in soil moisture from the precipitation events.

Useful Agriculture Links: [Vegetation Drought Response Index](#); [Evaporative Stress Index](#); [Vegetation Health Index](#); [NDVI Greenness Map](#); [GRACE-Based Surface Soil Moisture](#); [North American Soil Moisture Network](#). [Monthly Wild Fire Forecast Report](#).



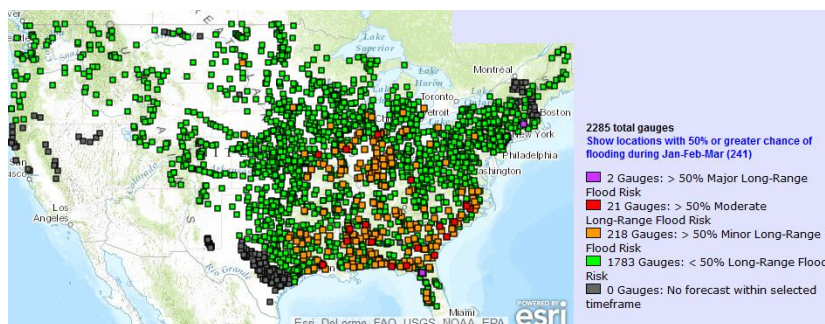
## Weekly Water and Climate Update

### Streamflow



Scattered gages in many parts of the U.S. are reporting much above normal streamflow. Some gages in the northern states are now frozen, so may not relate to the precipitation and snow conditions in that area. The rivers above flood stage are the Marias River near Shelby, MT, the Poplar River near Poplar, MT, Wabash River at Covington, IN, Wabash River at Montezuma, IN, Sabine River near Ruliff, TX, Santee River near Jamestown, SC, as well as three stations in North Carolina and three stations in northern Florida.

### National Long-Range Outlook



*Click map to enlarge and update*

*Currently the Upper Midwest part of the map has not been calculated for the long range flood outlook (dark gray dots).*

During the next three months, there is a risk of flooding in much of the eastern U.S. The Southeast and the Midwest have gages with a slight to higher risk of flooding. Currently, **2** gages have a greater than 50% chance to experience major flooding; **21** gages for moderate flooding; and **218** gages for minor flooding.

These numbers represent a **4** gage increase in the greater than 50 percent chance of minor flooding category since last week.

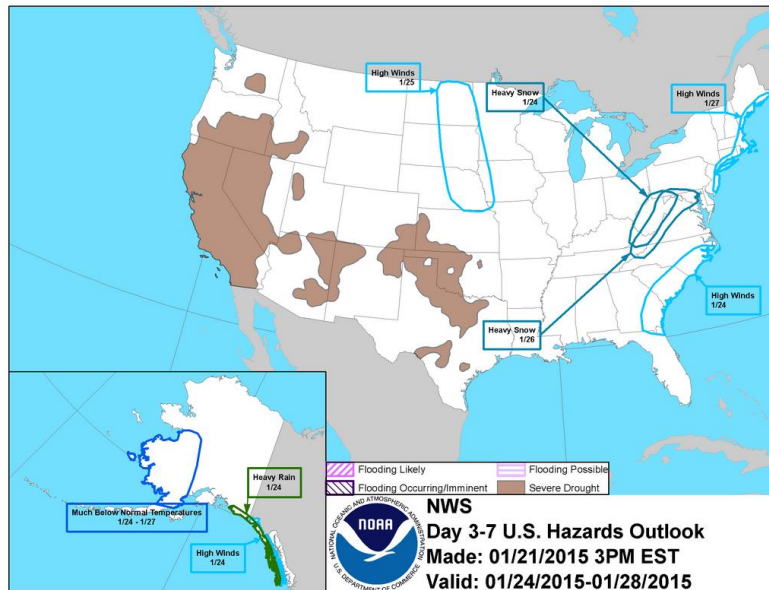
## Weekly Water and Climate Update

### National [Weather Hazards](#)

High winds are expected along the Atlantic seaboard from New England to New Jersey (1/27) and again along the Carolinas and Georgia (1/24). High winds are also expected in the northern Great Plains (1/25) (in light blue). Heavy snow is expected in the central Appalachians in North Carolina, Virginia, West Virginia, and into Maryland and Pennsylvania (1/24-26) (medium blue).

In Alaska, high winds and heavy rain are expected in Southeast (1/24), and very cold temperatures in the West (1/24-27).

Severe drought remains a large issue in much of the south central and western U.S.



### [National Drought Summary for January 20, 2015](#)

Prepared by the Drought Monitor Author: Richard Tinker, NOAA/NWS/NCEP/CPC.

#### Summary

"Drier than normal conditions prevailed over most of the country last week, precipitation totals exceeding a few tenths of an inch were restricted to a swath from the eastern Carolinas northward up the coast and through New England, and across the northern Intermountain West and the Pacific Northwest and southward to northwestern California. Generally 3 to 6 inches soaked areas of northern Oregon and Washington to the west of the Cascades, and 1 to 3 inches were observed in much of the Intermountain West and from Delaware northeastward to central Maine.

#### California

Between 2 and 5 inches of precipitation fell on a small part of northwestern most California, but the bulk of the state was dry. Following some of the previous week's deterioration in some areas, areas of dryness and drought changed little this week. Short-term deficits continued growing in the Sierra Nevada and adjacent Nevada, and intensely dry conditions persisted.

#### Central and Southern Plains

It's been a dry 30 days from the eastern Texas Panhandle and the central tier of Oklahoma northeastward through southern and eastern Kansas and into Missouri. Amounts below half of normal are widespread, and only 1/10 of normal at best was measured in a swath from west-central to north-central Oklahoma. The dry conditions prompted fairly broad expansion of D0 through eastern sections of Oklahoma and Kansas, plus adjacent Missouri. Patchy deterioration was noted farther west in the region. South of the Texas Panhandle, precipitation has been variable lately, and drought designations have likewise improved at some places and times, and deteriorated in others. But short-term conditions have averaged much closer to normal across the region as a whole, with precipitation shortfalls observed on time scales of 6 months to multiple years.

#### Hawaii and Puerto Rico

Only light precipitation at best fell on the dry area in southeast Puerto Rico, and the depiction remained unchanged. Precipitation has been somewhat below normal along the south-central coast of late, and this region will need to be monitored for possible expansion.

## **Weekly Water and Climate Update**

Another primarily dry week across Hawaii led to the introduction of D0 throughout the state, with moderate drought becoming established in much of the Big Island. Some hauling of water by livestock ranchers has been noted recently, and water supplies have diminished for residents dependent on rainfall catchment.

### **Lower Tennessee and Middle Mississippi Valleys**

Dry weather prompted expansion of moderate drought (D1) into southwestern Tennessee, northeast Arkansas, and the adjacent Missouri Bootheel. Throughout the dry region, precipitation shortfalls of 4 to 6 inches in D0 areas – and 6 to 8 inches in the swath of D1 – have accumulated over the last 3 months. Longer-term precipitation deficits are largest in most of the D1 areas of northeast Arkansas, where they've climbed into the 8 to 14 inch range over the course of the last 6 months.

### **Northern Plains and upper Midwest**

No precipitation fell last week, but seasonably to abnormally cold weather essentially locked conditions in place, preventing deterioration.

### **The Atlantic Seaboard**

A dry week away from the immediate coast allowed abnormal dryness (D0) to persist and expand. D0 was extended across central and northwestern Pennsylvania and parts of the Maryland and Virginia Panhandles. Most of the region is 2 to locally 5 inches below normal since mid-October 2014, with the largest shortfalls in northwestern and northeastern Pennsylvania. Farther south, D0 was introduced in the southern Appalachians and a small area near the Georgia/Alabama/Tennessee triple point. Most of these regions recorded 3 to 5 inches less than normal precipitation over the last 90 days, with deficits of 6 to 12 inches in climatologically wetter areas of the southern Appalachians.

### **The Central Gulf Coast**

A couple of weeks with little or no precipitation, in concert with rainfall deficits on time scales of 90 days or longer, led to the expansion of D0 into central and southeast Alabama. Other areas of dryness and drought remained unchanged. Rainfall deficits of 3 to 6 inches accumulated in most areas over the last 3 months, reaching 7 to 10 inches along part of the immediate coast. Shortfalls of 8 to 14 inches over the last 6 months are common across the regions of dryness and drought.

### **The High Plains, Rockies, and Intermountain West**

The only significant precipitation was observed in central and western Idaho, part of eastern Washington and Oregon, and a patch in western Wyoming. Central and northern Idaho received 1 to 3 inches in spots. Precipitation here has been persistently above normal for the last several months, and few if any drought impacts have been reported of late. Thus, D0 was removed from a broad area in central Idaho, with more limited improvement in some adjacent areas.

The rest of the northern Intermountain West received a few tenths to one inch of precipitation, and the rest of this broad region across the interior West was dry, save for isolated spots getting a few tenths of an inch at best. Drought tends to change slowly across this region, but precipitation deficits became large enough to bring north-central Arizona into extreme drought.

### **The Pacific Northwest**

Significant precipitation fell on areas west of the Cascades (4 to 10 inches in some areas), but this region is climatologically wet, and there was little impact on areas of dryness and drought. Much lighter precipitation from the Cascades eastward precluded any improvement there. Areas of dryness and drought remained unchanged.

### **Looking Ahead**

At least one storm system will track from the southern Plains eastward across the Gulf Coast states and northward along the Eastern Seaboard during January 22 – 26, 2015. As a result, a large swath along that path and the adjacent Appalachians should get at least an inch of precipitation, and totals may reach 3 inches in eastern Texas and along the central Gulf Coast. Farther north and west, including non-coastal New England and the northern Appalachians, only a few tenths of an inch are expected at best. Above-normal temperatures will settle across a large area from the middle Ohio Valley and central Great Lakes region westward through central and northern sections of the Plains and Rockies, plus the entire Intermountain West and West Coast. Daily high temperatures could average 15oF to 24oF above normal in the northern Plains and adjacent Rockies. In the Great Basin and most of California, 9oF to 12oF is



## Weekly Water and Climate Update

expected. Only the southern sections of the Rockies and High Plains will average significantly colder than normal, with anomalies of -3oF to -9oF.

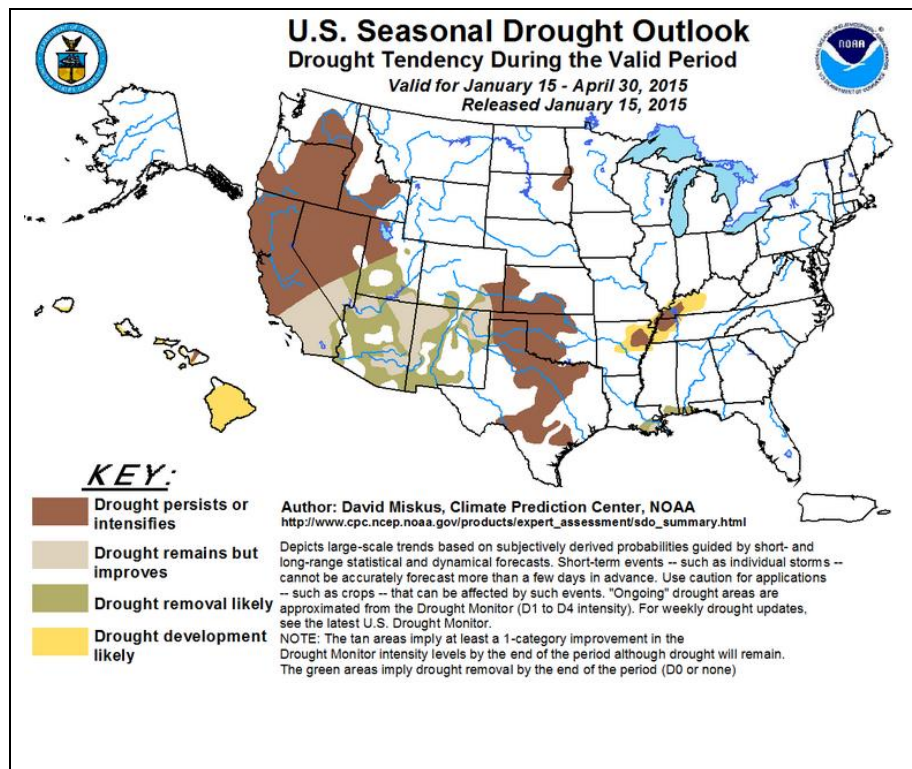
Conditions should be drier than normal for the ensuing 5 days (January 27 – 31, 2015) across the northern halves of the West Coast and Intermountain West. The odds also favor drier than normal conditions in a broad area from the Plains eastward to the Piedmont and from the northern Mississippi Valley and central Great Lakes region southward to the central Gulf Coast. Meanwhile, enhanced chances for unusually heavy precipitation extend from the North Carolina Coastal Plains northward along the coast and through New England. In addition, the southern Great Plains, all of the High Plains, the southern Rockies, and the Southwest also have enhanced chances for surplus precipitation. Odds favor subnormal temperatures from the Mississippi Valley eastward, and warmer than normal conditions from the Plains westward to the Pacific.”

## Supplemental Drought Information

### National Seasonal Drought Outlook

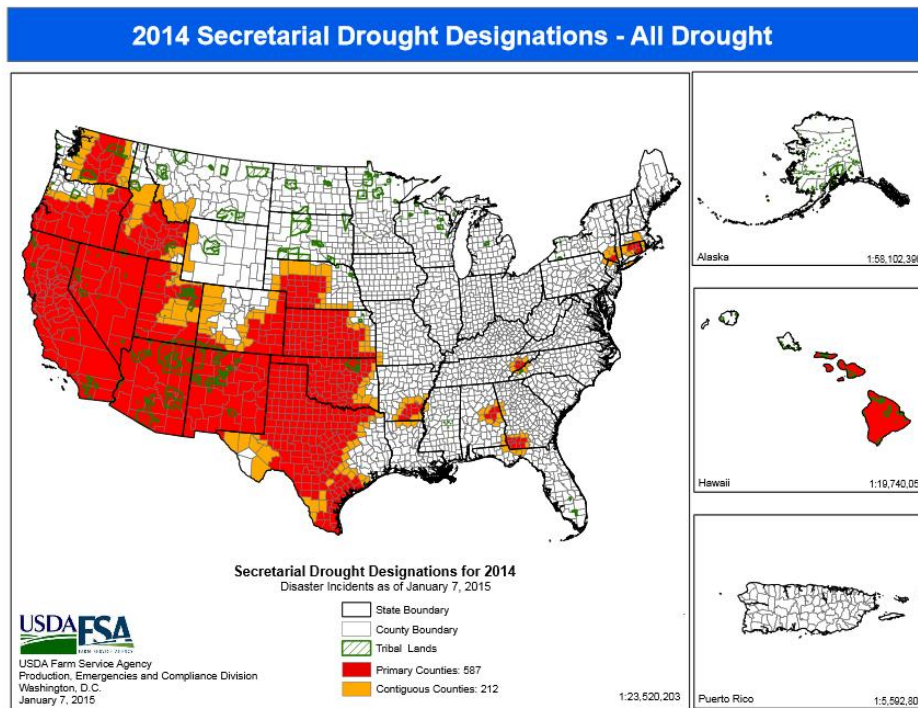
Nationally, [drought](#) is expected to persist or intensify over much of the West and south central U.S., including Nevada, Oregon, Washington, Idaho, Utah, Arizona, New Mexico, Texas, Oklahoma, Nebraska, and Colorado. Improvements are expected in southern California and in parts of the Southwest and Texas. The areas of drought in Arkansas, Tennessee, and Kentucky are likely to develop further. Hawaii drought development is also likely.

Also see: [National Significant Wildland Fire Potential Outlook](#) (updated on the first of each month) contains a content summary of the previous month's conditions.



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### 2014 USDA Secretarial Drought Designations, as of January 7, 2015

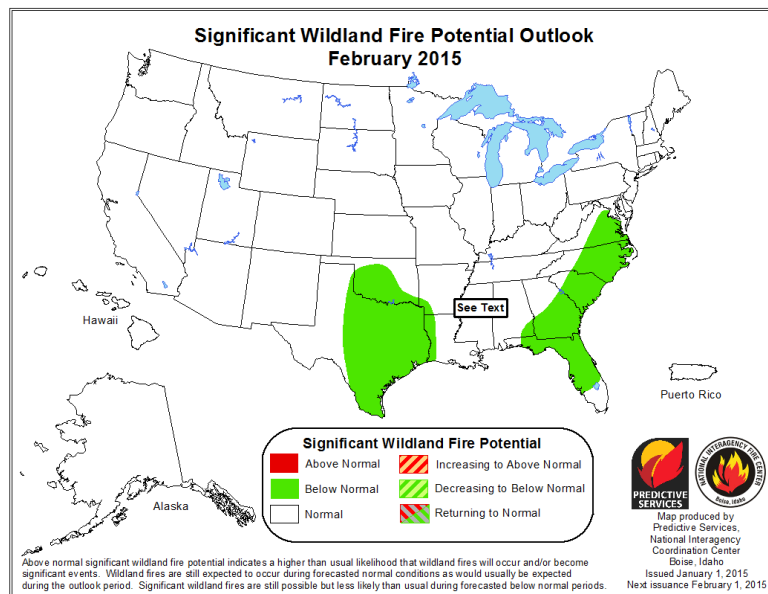


Refer to the USDA Drought Assistance [website](#) and [National Sustainable Agriculture Information Service](#).

Read about the new [USDA Regional Climate Hubs](#).

New useful resource: [NASS Quick Stats](#)

### National Fire Potential Outlook



#### February Fire Forecast

In January, much of the U.S. has normal [fire potential](#).

The below normal fire potential area in green on the map is forecast for Texas, and the Southeast to the Mid-Atlantic States.

### Additional Maps

U.S. Maps PowerPoint presentation: <http://dmcommunity.unl.edu/maps/US-Maps.ppt>.

Regional zooms of ACIS station data percent-of-normal precipitation: <http://dmcommunity.unl.edu/maps/All-CONUS-ACIS-PNP.pptx>.

National Water and Climate Center (NWCC) Surface Water Supply Index (SWSI) maps: <http://www.wcc.nrcs.usda.gov/wsf/swsi.html>

## Weekly Water and Climate Update

### Supplemental Drought-Agriculture News

Download [archived](#) "U.S. Crops in Drought" files.

The following is a collection of drought-related news stories from the past seven days or so. Impact information from these articles is entered into the [Drought Impact Reporter](#). A number of these articles will also be posted on the [Drought Headlines](#) page at the NDMC website. The list is compiled by Denise D. Gutzmer, Drought Impact Specialist, and National Drought Mitigation Center.

#### More water conservation needed in California

Officials with the State Water Resources Control Board, California Department of Fish and Wildlife, U.S. Bureau of Reclamation and other agencies met in Sacramento to urge the public to ramp up water conservation efforts because the state could be looking at a fourth year of drought. State reservoirs remained alarmingly low.

#### Delta smelt protections remain in place

Appeals by Central Valley farmers and California water districts wanting to pull more water from the Sacramento-San Joaquin Delta were brought to the U.S. Supreme Court and refused. A 2008 U.S. Fish and Wildlife Service plan to protect Delta smelt, a threatened species, still stands and limits the amount of water that can be drawn from the delta for the use of Central Valley farmers and water districts.

#### Proposal for changing water quality rules, water rights permits

The California Department of Water Resources and the U.S. Bureau of Reclamation cooperated in devising a plan to change water quality rules and water rights permits to contend with ongoing drought and submitted it to state regulators.

#### Water deliveries estimated at 15 percent by the State Water Project

Estimated water deliveries by the State Water Project rose from 10 percent to 15 percent with the California Department of Water Resources' Jan. 15 announcement. The statewide water equivalent in the Sierra Nevada was 4.9 inches or 36 percent of normal for Jan. 15.

#### Fish populations tumbling in Sacramento-San Joaquin Delta

Populations of five fish species in the Sacramento-San Joaquin Delta dropped dramatically during the past year of drought when freshwater flows failed to support their habitat. The affected fish include the Delta smelt, longfin smelt, American shad, threadfin shad and striped bass. Delta smelt numbers nosedived to record lows in the fall fish survey. Water diversions for humans, pollution, habitat loss and invasive species also affect fish counts.

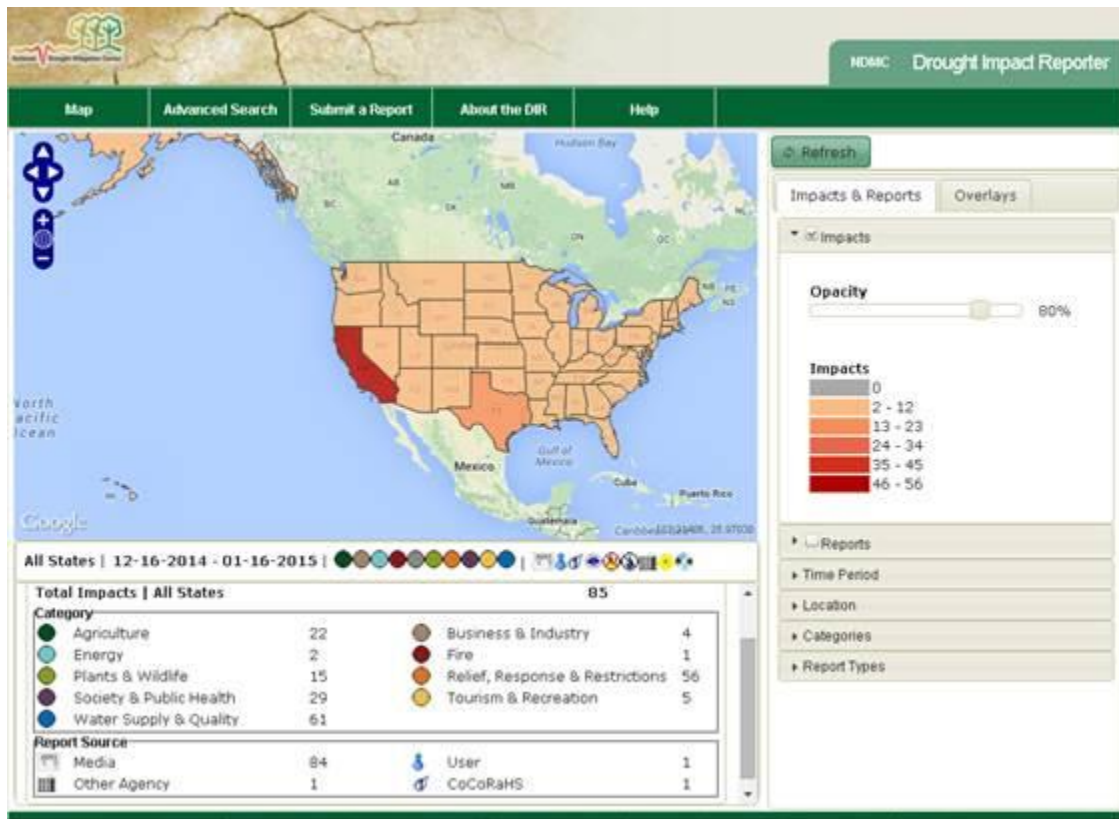
#### Snow surveyors learn how to shelter without snow

Participants at the annual Westwide Snow Survey School in Tahoe City, Calif., receive instruction in snow sampling, avalanche recognition, outdoor survival and emergency care. Normally they must also build a snow cave and spend the night in it, but this year, a new activity will replace the snow cave exercise. Participants will have to improvise shelter outdoors, but likely without snow for insulation. With the training area in its fourth year of drought, surveyors must be prepared to survive in snowless situations.



## Weekly Water and Climate Update

See the [Drought Impact Reporter](#) for more drought info



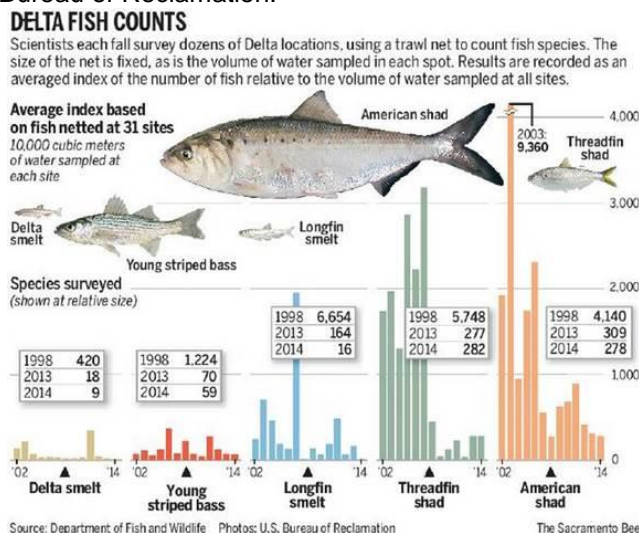
[It's official: 2014 was the hottest year in recorded history](#) – Jan 16

[Sea level rising faster than previously thought](#) – Jan 15

[Delta fish species plunge amid drought](#)

The Sacramento Bee (Calif.) Jan 14, **Sacramento-San Joaquin Delta, California**. Populations of five fish species in the Sacramento-San Joaquin Delta dropped dramatically during the past year of drought when freshwater flows failed to support their habitat. The affected fish include the Delta smelt, longfin smelt, American shad, threadfin shad and striped bass. Delta smelt numbers nosedived to record lows in the fall fish survey. Water diversions for humans, pollution, habitat loss and invasive species also affect fish counts.

The graphic below was created by The Sacramento Bee with data from the Department of Fish and wildlife and photos from the U.S. Bureau of Reclamation.



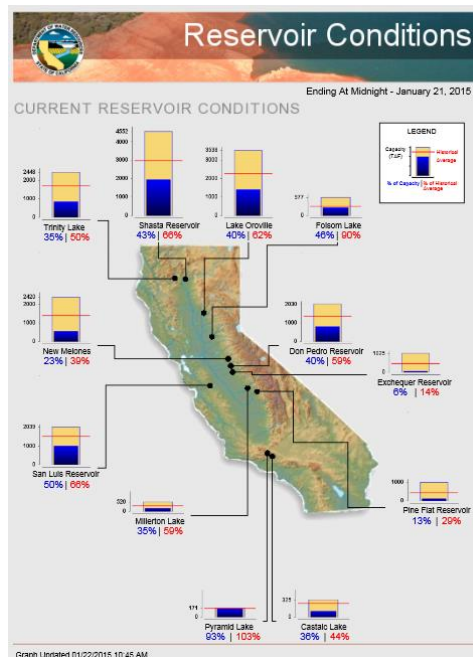
## Weekly Water and Climate Update

### Tea Cup Reservoir Depictions

- <http://www.usbr.gov/uc/water/basin/> ← Upper Colorado
- [http://www.usbr.gov/uc/wcao/water/basin/tc\\_gr.html](http://www.usbr.gov/uc/wcao/water/basin/tc_gr.html); ← Upper Snake
- <http://www.usbr.gov/pn/hydromet/burtea.html> ← Upper Colorado
- [http://www.usbr.gov/uc/water/basin/tc\\_cr.html](http://www.usbr.gov/uc/water/basin/tc_cr.html) ← Upper Colorado
- <http://www.usbr.gov/pn/hydromet/select.html> ← Pacific Northwest
- <http://www.sevierriver.org/reservoirs/teacup-diagram-of-reservoirs/> ← Sevier River Water (UT)

### California Reservoir Conditions

#### [California Major Reservoir conditions from the CA Department of Water Resources](#)



### State Activities

[State government drought activities](#) can be tracked through their drought plans. NRCS Snow Survey and Water Supply Forecasting (SSWSF) Program State Office personnel are participating in state drought committee meetings and providing the committees and media with appropriate SSWSF information. Additional information describing the [tools](#) available from the Drought Monitor can also be found at the [U.S. Drought Portal](#).

### More Information

The National Water and Climate Center (NWCC) [Homepage](#) provides the latest available snowpack and water supply information. This document is available [weekly](#). CONUS Water and Climate Updates from 2007 are available online. Reports from 2001-2006 are available on request.

This report uses data and products provided by the Interagency Drought Monitor Consortium members and the National Interagency Fire Center.

/s/

David W. Smith

Deputy Chief, Soil Science and Resource Assessment

1/22/2015